Rules of Engagement

Good afternoon. While not many people coming from California would say they were

delighted to experience East Coast weather in February, I am in fact happy to be here—Professor

Schoenholtz and I have been talking about my coming here for years, but my calendar hasn't

allowed it until now. I was almost worried that there wouldn't be anything interesting to talk

about by the time I got here.

That fear clearly didn't come to fruition. And because there's still so much attention on

the Fed and what we're doing, I want to talk today about what's normal for monetary policy. Not

the "new normal" that I and so many others invoke when we're talking about the shape of the

economy after the recession. Rather, what's normal in terms of the process—how I *think* about

making policy, particularly now that we've started the process of raising rates. And I should

pause here to say that everything you'll hear today is what *I* think—the views are mine alone and

do not necessarily reflect those of others in the Federal Reserve System.

What is normal?

We've had the first rise in rates, but it's been a long time since they were above zero.

How do we look at things now and what does the future look like as we make decisions that

affect the contours of the American economy?

I spend a lot of time talking about being data dependent. I literally made T-shirts that say,

"Monetary policy: It's data dependent." But there's some confusion, because a lot of people take

this to mean that I'm just waiting for the next employment or inflation report. This is what

happens when a Fed official tries to substitute economistese with real English. What I actually mean is that being driven by the data is about having a policymaking strategy. It's about implementing consistent and predictable behavior that is driven by the economy's performance relative to our goals.

Rules, rules, rules

As anyone who follows the Fed knows, there are a number of approaches we use to inform our policy decisions.[1] The most famous is the Taylor rule and its variants, which have been the subject of a great deal of study and commentary.[2]

The Taylor rule looks at where inflation and output are today and uses a formula to reach a recommendation on where rates should be. Basically, it says that for every percentage point increase in inflation, you should raise rates by more than a percentage point. And when the economy falls into recession, you should lower rates.

What's striking about the Taylor rule is that it doesn't incorporate forecasts or other information about the economy. It doesn't take into consideration why inflation is low or where we think the economy will be in two years. You don't need hundreds of economists deciphering all the data and putting together elaborate forecasts. You simply focus on two key data points that describe where we are today. An analogy may help: The Taylor rule says that to drive this car, all you need to do is steer. Just stay in your lane—you don't need to think about every aspect of road conditions or what's coming miles down the road.

That sounds pretty straightforward. But there are a number of problems you run into.

First is that crucial elements of the Taylor rule are the normal, or "natural," levels of economic activity and interest rates. This means knowing what the economy looks like—in terms

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[1] See, for example, Board of Governors (2010).
[2] See Taylor (1993), Levin, Wieland, and Williams (2003), Taylor and Williams (2011), and Yellen (2012).

of GDP, employment, the unemployment rate, interest rates—when it's running on all cylinders. These natural rates play an important role in the Taylor rule, but are hard to know with any certainty, and they change over time. Let me give you an example: Two years ago, I put the natural rate of unemployment at about 5½ percent. But as more data came in, I reassessed, and now see 5 percent as natural in the post-recovery economy. One of the hallmarks of data dependency is that natural rates can and do shift over time.

The same holds true for interest rates. The Taylor rule assumes that the long-run normal interest rate is fixed forever. However, evidence is building that the new normal for interest rates is quite a bit lower than we've been accustomed to in recent years.[3] Economists have a concept called the "neutral" funds rate—that is, a federal funds rate that balances monetary policy so that it's neither accommodative nor contractionary. Hence the "neutral." The longer-run neutral rate, called r* (pronounced "r-star"), is essentially what the inflation-adjusted rate of interest will be once the economy's back to full strength. This can sound confusing, since the Fed sets the federal funds rate. But the neutral rate is a function of the economy, not policy; we can align the funds rate with r*, but we don't control its underlying level.

The point is that these natural, or neutral, levels of economic activity and interest rates change over time in ways that are often unpredictable, and a steadfast rule that assumes that they are fixed can lead you astray.

A second issue is what is called the "zero lower bound." That is, interest rates can't move much below zero. Why does this matter? Because standard monetary policy rules would have prescribed interest rates well below that mark during the recession and recovery. In fact, one version of the Taylor rule would tell us that, in the depths of the recession, interest rates

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[3] Laubach and Williams (2015), Williams (2015b).

should've been –5 percent.[4] Research shows that strict adherence to the Taylor rule in the presence of the lower bound carries with it considerable costs in terms of stabilizing the economy and maintaining price stability.[5]

On the other end of the spectrum from the Taylor rule is something called "optimal control." Here, you punch your targets into the computer—I want inflation to be 2 percent, I want the unemployment rate to be 5 percent—along with a baseline view of the economic outlook for the next several years. The computer is programmed with a detailed model of the economy and calculates, with all the available information, what path for interest rates will get you as close to your target as possible, period by period, over the next several years. To use the optimal control method, you need a detailed model of how the economy works and forecasts of every aspect of where you think it's headed.[6] The polar opposite of the Taylor rule.

The optimal control approach puts a great deal of emphasis on the fact that monetary policy works, to cite the great Milton Friedman, with long and variable lags.[7] Monetary policy takes at least a year or two to have its full effect, so we need to think about where we're going and plan for that.[8] It also accounts for headwinds, such as the impact of oil prices, volatility in China, and the effect of international developments on the dollar. It's telling you *how* you should be driving, when you should turn the wheel, when you should let up on the gas. Optimal control says it's not just about steering the car, it's about planning for what's coming ahead—there may be hairpin curves or exit ramps or, in a worst-case scenario, a cliff with no guardrail. Without warning signs or a map of the route, how can you best navigate the road?

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[4] Rudebusch (2009), Williams (2009).
[5] Reifschneider and Williams (2000).
[6] Yellen (2012).
[7] Friedman (1961).
[8] Havranek and Rusnak (2013).

Put that way, it sounds like optimal control is preferable to a simple Taylor rule. On its face, most people would argue that accounting for potholes—and everything else—along the way is essential. So why don't we just abandon these simple rules and embrace optimal control?

The answer is that, for all our intellect—and I'll admit, economists are very sure their collective intellect is almost too much for the world to handle—there's a limit to how much we truly know about the future. We have forecasts, which are based on sound data and analysis. But they're only forecasts, and the unexpected can always erupt. I don't have a 100 percent degree of certainty where housing prices are going. I don't know for sure what's going to happen with China. I wouldn't bet my life on what the ECB or Bank of Japan is going to do. We may think we have it all figured out, but sometimes economists' track records leave something to be desired. So there is a risk with the optimal control approach that we'll believe our theories and our models too much, and that can lead us astray.[9] There is a need for humility and to recognize our limitations.

If Taylor rules are too rigid and optimal control relies too much on perfection, is there a Goldilocks approach? One that looks ahead and adapts to changing circumstances, but doesn't rely on the omniscience of economists?

Something called "difference rules" fit that bill. Personally I am a big fan of difference rules, for a couple of reasons. First, I've written a lot about them, and nothing pleases economists more than being able to talk about their own research.[10] Second, this same research finds that these rules perform well in a wide variety of circumstances and are particularly suited for the lower bound.[11]

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[9] Orphanides and Williams (2008), Levin and Williams (2003).
[10] Orphanides and Williams (2002, 2006), Orphanides (2003).
[11] See also Tetlow (2015).

The key to the success of difference rules is that they don't prescribe the level of interest rates, but the change in them. According to difference rules, if inflation is expected to be higher than the desired level, you raise interest rates; if unemployment is rising, you lower interest rates. Nothing else enters into the calculation—not the natural level of economic activity or the neutral interest rate. That means that they don't rely on these hard-to-measure and changing concepts. Instead, they simply monitor the data in a way that keeps the economy on track.

One rule to rule them all?

Now, despite the lengthy explanation of the differences between variants of monetary policy rules and optimal control—and there *are* differences—the bottom line is that they're not *that* different. They're driven by the same factors. If the economy is in recession or inflation is undesirably low, all of them will say that interest rates should be low. Where they differ is in what they take into account and how they weigh different factors.

So it would be easy to propose, as many people have, that we pick one approach or rule and stick to it. Proponents of this view say that having a set rule helps in communicating our intentions. It offers clarity and predictability about what the Fed is doing and why. It also, to some extent, "holds the Fed to account"—that is, we have a rule to follow and if we don't, we have to explain our thinking.

I don't object to this in principle at all—I think central banks like the Fed have become, and should continue being, more open about policy rules and analysis. Several countries now publicly share these kinds of analyses: The Riksbank in Sweden, for instance, and the Norwegian Norges Bank.[12] It just means being open and transparent about the thinking and analysis that go

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[12] See their websites: http://www.riksbank.se/en/Press-and-published/Published-from-the-Riksbank/Monetary-policy/Monetary-Policy-Report/ and http://www.norges-bank.no/en/Monetary-policy/.

into monetary policy and how policymakers come to the conclusions they do. So I shouldn't object to having a set rule to follow, to offer the public more clarity, right?

If only life were that simple.

As the preceding discussion highlighted, while each of these policy strategies has value, there is no consensus about which one works best. The truth is that there is no absolutely right rule. They're all just different ways to think about policy, and to come to a truly educated decision, it helps to look at the range of options. That is exactly what I do. I don't focus exclusively on one rule, but examine a wide variety, hoping to glean insights and commonalities by comparing prescriptions from different approaches. In this regard, I favor an eclectic approach, recognizing that policy is always made with a high degree of uncertainty and one shouldn't place all their bets on one approach.

While I understand the impetus behind wanting a single rule to follow, it's just not ready for prime time.[13] It reminds me of the FDR quote that rules aren't necessarily sacred, principles are.

Rules and perspectives

Fundamentally, what all these approaches do is help us think about policy, and the abundance of perspectives is important. The Fed is unique among central banks in the way we are organized. And one of the benefits of that structure is that it brings together 19 people with different backgrounds, different experiences, and different opinions. There is a lot of disagreement among policymakers and economists about what works best. Trying to pigeonhole all of them into one rule runs counter to the federated structure of the Fed that seeks to incorporate a diversity of views. Operating under one rule would mean losing the richness that's fundamental to our success.

[13] Williams (2015a).

Talking through different viewpoints and thought processes ensures that we're truly looking at the economy through the correct lens, and vigorous debate means no one's operating by knee-jerk reaction. This is why we can't just be replaced by a monetary policy robot, tempting as that might sound.

Rules and discretion in action

All of this helps to explain the recent Federal Open Market Committee decision to raise rates, and our expectation that the subsequent increases will be gradual.

I get asked a lot why the Fed raised rates when inflation was not just low, but when it had been persistently below target for some time. This decision is actually a good illustration of the use of various approaches to thinking about monetary policy.

Both the basic and modified Taylor rules would call for an immediate increase in rates, mostly because we're so close to our maximum employment goal. On the other hand, some people would call for waiting to act until we see the whites of inflation's eyes. The far reaches of the spectrum get brought together because we're also considering the difference rule and optimal control, which take forecasts into account in varying degrees, and because there are currently 17 voices in the room—who've spent the previous week debating the same issues with their own staffs of PhD economists. The fact that we raised rates when we did is an example of how ideas and instructions from all points on the playing field can come together in thoughtful, well-debated consensus.

My own view is that it was time. The economy has been showing solid momentum, the recovery was well into its seventh year, and I'm someone who takes forecasts into account. I expect to see U.S. GDP growth of about 2¼ percent for 2016, unemployment edging down further below my estimate of the natural rate, to about 4½ percent by late in the year, and

inflation—despite the stubbornness it's shown—to move back up to our 2 percent goal within the next two years. All of which argue for getting on the normalization track.

I also expect this to be a gradual process. This reflects the fact that the economy still needs a gentle shove forward from monetary policy, as we continue to navigate some headwinds—like weakness abroad—and their effects, particularly on the dollar and commodity prices. It also reflects my wish to take things slowly, to be able to adjust to circumstances and data as they come in. These projections take into account the headwinds, low growth, and low r* that come out of our models and are incorporated into the optimal control paths.[14]

Again, this highlights that I give importance to forecasts, but am perfectly aware of their fallibility. And that the three things I'm most driven by are data, data, and data.

Conclusion

So there you have it. The Fed uses a number of approaches to help us think about the economy and monetary policy—they're all insightful, they're all useful, and they're all a part of the debate. But none is absolutely fail-safe. They will continue to be part of the discussion, but the idea that we should follow only one—never deviating from the path—is ill-advised.

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[14] Williams (2016).

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